## **CS 13:** Mathematical Foundations of Computing

## Lecturcises 05 (due Saturday, November 4th @ 11:30pm)

**Directions**: These problems were presented within the last week as "exercises" in lecture. During lecture, you were able to collaborate with students, TAs, and Prof. Blank. Your task now is to write up solutions to these problems **without discussing them with anyone**. You should submit the lecturcise below on Gradescope. Note that your submissions will be graded on correctness, not effort.

## **Rolling Dice**

Consider the following experiment.

- 1 die1 = RollDie(6)
- 2 die2 = RollDie(6)

Let  $D_1$  be the event die1 = 1. Let  $D_2$  be the event die2 = 1. Let  $S_5$  be the event die1 + die2 = 5.

- Are  $D_1$  and  $D_2$  dependent or independent?
- Are  $D_1$  and  $S_5$  dependent or independent?